CLAIMS:

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is:

1 1. A computer device comprising:

2

- 3 a projecting device for displaying a graphical representation of a keyboard, said
- 4 graphical representation including key locations capable of being selected by an
- 5 object, said graphical image displayed in an area proximate said device;

6

- 7 a signal detection system for detecting the presence of an object located at a selected
- 8 key location within said area; and,

9

- mechanism for determining the selected key in response to detecting an object at a
- 11 corresponding selected key location and registering said selected key as a keystroke in
- said computing device.
 - 1 2. The computer device according to Claim 1, wherein said signal detection
- 2 system is capable of detecting objects at locations within said limited range defined by
- 3 said graphical representation.
- 1 3. The computer device according to Claim 2, wherein said signal detection
- 2 system includes a radar device for detecting the location of objects within said limited
- 3 range.
- 1 4. The computer device according to Claim 2, wherein said signal detection
- 2 system includes a laser generator and photodetector device for detecting the location
- 3 of objects within said limited range.

- 1 5. The computer device according to Claim 2, wherein said signal detection
- 2 system includes an electromagnetic signal transmitter means for iteratively
- 3 transmitting series of electromagnetic signals sweeping said limited range, and
- 4 receiving electromagnetic signal reflections from detected objects, wherein said
- 5 electromagnetic signal transmitter means is located a predetermined distance away
- 6 from said graphical representation.
- 1 6. The computer device according to Claim 5, wherein said determining
- 2 mechanism includes: means for calculating a distance between said electromagnetic
- 3 signal transmitter means and said detected object; and means for determining a current
- 4 iteration of said series of electromagnetic signals, wherein said key is determined
- 5 according to said distance and said current iteration.
- 1 7. The computer device according to Claim 5, wherein said means for calculating
- 2 a distance between said electromagnetic signal transmitter means and said detected
- 3 object includes means for determining an elapsed time between transmission of said
- 4 electromagnetic signal and receipt of its corresponding reflected signal.
- 1 8. The computer device according to Claim 5, further comprising memory means
- 2 comprising a mapping of valid selectable key strokes according to calculated distances
- 3 and electromagnetic signal pulse iteration.
- 1 9. The computer device according to Claim 5, further comprising leg means for
- 2 adjusting a vertical and angular orientation of said projecting and signals detection
- 3 devices with respect to a surface, said adjusting mechanism for adjusting a range of
- 4 said series of electromagnetic signals according to a projected display.
- 1 10. The computer device according to Claim 1, wherein an object includes a finger
- 2 of a user of said computer device.

- 1 11. The computer device according to Claim 5, further comprising means for
- 2 customizing content of said virtual keys provided in the graphical representation of
- 3 said keyboard.
- 1 12. A computer device comprising:

2

- a projecting device for displaying one of: a screen image or portion of a screen image
- 4 display, said screen image including displayed items capable of being selected by an
- 5 object;

6

- 7 a signal detection system for detecting the presence of an object located at a selected
- 8 item location; and,

9

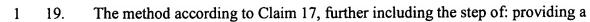
- mechanism for determining the selected item in response to detecting an object at a
- 11 corresponding selected key location.
- 1 13. The computer device according to Claim 12, wherein said signal detection
- 2 system is capable of detecting objects at locations within a limited range defined by
- 3 said graphical representation.
- 1 14. The computer device according to Claim 13, wherein said signal detection
- 2 system includes a radar device for detecting the location of objects within said limited
- 3 range.
- 1 15. A method for providing input to a computer device comprising the steps of:

2

- 3 a) displaying a graphical representation of a keyboard image,
- 4 said graphical representation including key locations capable of being selected by an
- 5 object, said graphical image displayed in a limited area proximate said device;

6

7	b) detecting the presence of an object located at a selected key location; and,
8	
9	c) determining the selected key in response to detecting an object at a corresponding
10	selected key location.
1	16. The method according to Claim 15, wherein said detecting step includes the
2	steps of:
3	
4	iteratively transmitting series of electromagnetic signals for sweeping said limited
5	area, a transmitter of said electromagnetic signals being provided at a limited distance
6	away from said graphical representation;
7	
8	receiving via a receiver device electromagnetic signal reflections from an object
9	positioned within said limited area.
1	17. The method according to Claim 16, wherein said selected key determining step
2	comprises the steps of:
3	•
4	calculating a distance between said electromagnetic signal transmitter and said
5	detected object; and,
6	
7	determining a current iteration of said series of electromagnetic signals, wherein said
8	key is determined according to said distance and said current iteration.
1	10 The method according to Claim 17 wherein said calculating stan includes the
1	18. The method according to Claim 17, wherein said calculating step includes the
2	step of determining an elapsed time between transmission of said electromagnetic
3	signal and receipt of its corresponding reflected signal.



- 2 mapping of valid selectable key strokes according to calculated distances and
- 3 electromagnetic signal pulse iteration.
- 1 20. The method according to Claim 16, wherein prior to iteratively transmitting
- 2 series of electromagnetic signals for sweeping said limited area, the step of
- 3 positioning the transmitter device to thereby restrict electromagnetic signal sweep
- 4 range.
- 1 21. The method according to Claim 16, wherein after determination step c), the
- 2 step of registering said selected key as a keystroke in said computing device.
- 1 22. The method according to Claim 16, wherein after determination step c), the
- 2 step of notifying a user of a key being selected in said projected display, said notifying
- 3 including one or more of: changing a color or dimension of the selected virtual key.